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CONTENTS.

PAGE

Report upon an Expedition Sent by the Johns Hopkins University to Investigate the Prevalent Diseases in the Philippines. By Simon Flexner, M. D., and Lewellys F. Barker, M. B., - - - - - - - - - - - - - - - - - - 37

A Case of Multiple Gangrene in Malarial Fever. By William Osler, M. D., - - - - - - - - - - - - - - - - - - 41

Benjamin Jesty: A Pre-Jennerian Vaccinator. By Thomas McCrae, M. B., - - - - - - - - - - - - - - - - - - 42

PAGE

Hæmophilia in the Negro. By Walter R. Steiner, M. D., - 44

Summaries or Titles of Papers by Members of the Hospital and Medical School Staff appearing Elsewhere than in the Bulletin, - 47

Proceedings of Societies:

Hospital Medical Society, - - - - - - - - - - - - - 48

Exhibition of Medical Cases [Dr. Futcher].

Notes on New Books, - - - - - - - - - - - - - - - - - 49

REPORT UPON AN EXPEDITION SENT BY THE JOHNS HOPKINS UNIVERSITY TO INVESTIGATE THE PREVALENT DISEASES IN THE PHILIPPINES.

To President Gilman, Doctors Welch and Osler,

Philippine Committee of the Johns Hopkins University Medical School.

Gentlemen:—We have the honor to submit to you a brief account of our work and movements in carrying out your commission to study the prevalent diseases in the Philippine Archipelago. Your commissioners, consisting of Dr. Simon Flexner and Dr. L. F. Barker, to whom were voluntarily attached Messrs. J. M. Flint and F. P. Gay, of the Medical School, the latter having given their time and paid all their own expenses, sailed from Vancouver on March 29th, 1899, and arrived in Manila, May 4th, where they immediately established themselves for the purpose of the work mentioned. Owing to the military situation it was found impracticable to visit other ports in the Archipelago or to penetrate into the interior of the Island of Luzon. The entire time of the commission, therefore, was spent in the study of disease existing among the natives and American troops in Manila and at Cavite.

Work in Japan and Hong-Kong.

As transport sailings were uncertain, and the passage out by them slow, it was decided to save time and go by fast steamer, the Canadian Pacific Railway giving special rates to the commission on tickets around the world.

The original plan of your commissioners was to proceed directly to Manila by way of Hong-Kong, at which latter port it was intended to stop only long enough to outfit for the tropics and to catch the earliest steamer sailing for Manila. After consideration of the probability that certain new kinds or phases of disease, not occurring in temperate regions, might be encountered in the Archipelago, and of the fact that the diseases of the Philippines would probably have much in common with those of Japan, it was decided to spend one week in Japan, where modern hospitals could be visited and advantage taken of the results of the study of tropical disease by highly trained and eminent Japanese physicians. The decision proved to be valuable in many ways; and we especially desire to express our obligations to Professors Aoyama, Mitsukuri, Miura and Kitasato, who showed us many courtesies. The opportunity to see in the Japanese hospitals pure and mixed examples of beri-beri assisted us greatly in our subsequent studies, as did also the observations on dysentery made in the Institute for Infectious Diseases at Tokio.

While outfitting at Hong-Kong we improved the opportunity to study the bubonic plague, which was still prevailing at that port. This study was made easy by the generosity and courtesy of the English Civil Physician, Dr. James Lowson, in charge of the Plague Hospital and Mortuary. The study, begun in this way, was extended when two months later we returned to Hong-Kong, *en route* to America. At this time a considerable exacerbation of the disease had taken place, and within a week or ten days we saw several scores of cases and performed many

autopsies. The several forms of infection: inguinal, axillary, tonsilar, cervical and pulmonary, were thus encountered. Bacteriological examinations were made and tissues collected for future study. Two of the party (Dr. Barker and Mr. Flint) spent on the return journey three weeks (at their own expense) in India, where the great epidemics of plague there raging were observed.

Arrival in Manila.

Immediately upon our arrival in Manila, quarters were sought at the "Hotel de Oriente." Very insufficient accommodations were secured for a limited time, as the sudden accession of families of Army and Naval officers had strained the hotel to its fullest capacity. Having been forewarned of the conditions of living in Manila, we took the precaution to bring with us from Hong-Kong a group of Chinese servants, intending to set up housekeeping if practicable. After much difficulty a small house was secured in San Miguel, where, by hiring parts of the furnishings and buying what could not be rented, a temporary establishment was secured.

Within a few hours after our arrival, the credentials and private letters brought were presented to Colonel Woodhull, Surgeon-in-Chief to the 8th Army Corps, and to General Otis. Colonel Woodhull afforded us every opportunity to prosecute our work in the military hospitals. Although no special introduction was in our possession, we quickly met Dr. Bournes, chief health officer of Manila, who opened to us the hospitals under his charge. Somewhat later we met Dr. Pearson, Chief Naval Surgeon, who opened to us the Naval Hospital at Cavite.

Hospitals in Manila.

Civil Hospitals. These consist of a large hospital within the walled city, *San Juan de Dios.* It has a capacity of from 250 to 300 beds, and accommodated, during our stay, both natives and Europeans. The number of European patients was small. When the military hospitals were much crowded a certain number of wounded prisoners of war were accommodated. The hospital contained chiefly native medical cases of both sexes. The *San Lazaro* or leper hospital, in the outskirts of Manila, contained from 80 to 100 lepers during our stay. These had come from Luzon, almost exclusively from Manila and its immediate surroundings. The two sexes are provided for in separate, large and airy wards. One wing of the building, having a private entrance, is devoted to native prostitutes who apply regularly for examination, and are incarcerated here and treated medically when found to be suffering from venereal disease.

Military Hospitals. These consisted, besides the regimental hospitals which were virtually detention camps, of three Reserve Hospitals—the 1st, 2nd and 3rd Reserve Hospitals; a convalescent hospital on Corregidor Island and the Hospital Ship *Relief,* which was anchored in the bay. The First Reserve Hospital, under the control of Major Crosby, had been originally the Spanish military hospital. It has been from time to time, by the erection of tents over platforms raised a foot or two from the ground, increased in capacity until in July it contained 1200 or more beds. The Second Reserve Hospital, under the control of Major Keefer, was a transformed modern school-building, and because of its limited capacity (250 beds), high ceilings and wide corridors it made a model hospital. The Third Reserve Hospital had just been established towards the end of our visit, and was smaller than the others and intended as a convalescent hospital. The hospital at Corregidor is a temporary structure and intended for convalescents. It is especially well adapted for its purpose because of the high and hilly character of the island and its complete investment by the sea. The *Relief* was used as a hospital for acute cases; but some time before we left, the acute cases were transferred to the Reserve Hospitals, and the *Relief* sailed for San Francisco with invalided men.

The Reserve Hospitals accommodated especially American sick and wounded; but a ward in the First Reserve Hospital was set aside for the Filipino wounded.

After the outbreak of beri-beri at Cavite, a hospital under military control was established at San Roque in the remains of the Spanish Marine Hospital which had been wrecked by the insurgents.

Naval Hospital. A small hospital for sick seamen and marines was established at Cavite. Through the courtesy of Dr. Pearson this was open to us for clinical studies.

Clinical, Pathological and Bacteriological Laboratory. Through the kindness of Colonel Woodhull and of Major Crosby, the officer-in-chief of the First Reserve Hospital, a small Filipino house, situated on the banks of the Pasig, was given us in which to establish a laboratory. This was done on the second floor of the house. The expense of putting up working-tables was kindly borne by the Medical Corps of the Army. The laboratory equipment was set up in this building, and within a very few days after our arrival work was begun. We desire to speak of the co-operation of the Medical Staff of the hospital who afforded us every opportunity to visit the wards, and many of whom joined or assisted us in clinical and pathological work. We wish especially to acknowledge the co-operation and assistance of Lieut. Richard P. Strong, a graduate of the Johns Hopkins University Medical School, who had on our arrival already begun to do laboratory work and who gave up much of his valuable time in furthering our interests. It was found unnecessary to establish laboratories in the other hospitals, in the first place, because all were connected with the First Reserve by the Signal Service telegraphic system of which we had free use; and next, because all the dead were carried to the morgue in conjunction with the First Reserve Hospital. We went or were frequently called to the other hospitals to make clinical and bacteriological examinations.

With few exceptions, all the dead were subject to autopsy. Post-mortem examinations were made at the Civil Hospitals upon natives, and at the Military Hospital upon all that died. Exceptions were made only in the cases of those dead from gun-shot wounds, when, if pressed for time, necropsies were sometimes omitted.

Prevailing Diseases.

The subject of the prevalent diseases may be considered as they affect (1) the natives, and (2) Europeans and Americans, especially the American garrison.

Diseases affecting Natives. (a) *Skin Diseases.* Of the skin diseases prevailing among the natives, aside from small-pox and other specific exanthemata, may be mentioned (1) diseases of the scalp, which are very frequent; (2) dhobie itch; and (3) an affection which resembles closely, and which is probably identical with, Aleppo boil (Delhi boil, Biskra button, *epidemische Beulenkrankheit*). (b) *Small-pox.* This disease has been so generally prevalent in Luzon that the natives have, to a large extent, lost fear of it. All evidence points to the greatest carelessness in preventing its spread during Spanish times. Isolation of the sick and disinfection of the habitations seem not to have been attempted; and vaccination, even among the Spanish garrison, had not been carried out. Under these circumstances it could be no surprise that after the American occupation the disease should appear and even become epidemic. The epidemic which appeared early last year was promptly met by Dr. Bournes, who caused the Spanish garrison still in Manila, and natives and Chinese within the city to be vaccinated. In order to insure satisfactory results he found it necessary to re-establish a vaccine farm in which young *carabao* were used for the preparation of the virus. Under the influence of this measure and by the aid of isolation of the sick, the disease had, in May, practically disappeared within the military lines about Manila. (c) *Leprosy.* A definite focus of this disease exists in Luzon. The cases, in the neighborhood of 100, which are confined in the San Lazaro Hospital, came from Manila and the country immediately surrounding that city. The disease affected both sexes, being more frequent in adults, although also present in half-grown boys and girls. The commonest forms were the tubercular and mutilating. Autopsies were performed upon several cases that had died during our stay. (d) *Tuberculosis.* Accurate statistics of the extent of the prevalence of this disease are difficult if not impossible to obtain. That the disease is a common one is indicated by several facts. It is frequently met with in the native hospitals, where it may have been recognized during life or is disclosed at autopsy. Many cases of supposed beriberi which we autopsied at San Juan de Dios proved to be tuberculosis. It is possible that the two diseases had co existed, for we found such combinations freely recognized by Japanese physicians in the hospitals in Japan. Tuberculosis of the lungs was also found as a common complication in leprous individuals that came to autopsy. Not very infrequent spectacles met with on the streets are much emaciated and weak natives affected with suggestive coughs and free expectoration. While it is not certain that these individuals were examples of tuberculosis, there is strong probability that this explanation of their condition is the correct one. (e) *Venereal Diseases.* Syphilis, by general agreement (statistics not available), does not prevail unduly. Chancroids and gonorrhœa are, on the other hand, very common. The majority of the prostitutes confined in the San Lazaro were victims of these two diseases. A very common complication of the soft sore, owing to lack of cleanliness, is swelling and suppuration of the inguinal glands. (f) *Beri-Beri.* This disease is well known among the natives. It would appear to be epidemic and endemic in Luzon. It is, judging from cases met with in San Juan de Dios Hospital and the statements of native physicians, constantly appearing in a sporadic form. During our stay an epidemic appeared among the Filipino prisoners confined at Cavite. Some 200 cases developed in a few weeks; the mortality ranged from 20 to 30 per cent. The several recognized forms of the disease—œdematous, paralytic, and mixed—were encountered. Clinical and bacteriological studies were made upon the living, and the dead were subjected to autopsy and bacteriological examination. The difficulty of getting to and fro between Manila and Cavite, on account of the impossibility of land communication, made this part of our work difficult and time-consuming. A considerable collection of pathological material and other data has been made. This material is now in process of study and arrangement.

Diseases affecting Americans. The chief causes of disability among American land forces are the enteric diseases. These are diarrhœa, dysentery, typhoid fever, and gastro-intestinal catarrhs. Many of the diarrhœas are merely preliminary to the symptoms of dysentery. Other infectious fevers are relatively infrequent. A small number of cases of scarlet fever and diphtheria only were encountered. The malarial fevers prevailed but not seriously during the months of May, June and July. (a) *Dysentery.* This disease is responsible for the greatest amount of invalidation and the highest mortality. It appears in acute, sub-acute, and chronic forms. The chronic form is sometimes attended by secondary abscess of the liver. The acute form may end in 24, 48, or 72 hours. In it the whole of the large intestine and usually the lower portion of the ileum are involved. The mucous membrane of the gut is swollen, congested and œdematous, in places hemorrhages have taken place into the mucous membrane, and the submucosa is swollen and its blood-vessels greatly dilated. No ulcers existed in such cases. Amoebae were absent or very difficult to find in the fresh stools and in the intestinal contents immediately after death. In the sub-acute and chronic forms ulcers are present in the mucosa; the coats of the intestine are greatly thickened; at times large sloughs of mucous membrane, partly detached, occur, and the lesions are confined to the large intestine. Amoebae are more commonly present in these cases, but are variable as to actual occurrence and numbers. Large hepatic abscesses, usually single, were encountered in a number of these cases. Amoebae were variable in the contents of the abscesses. In one very large abscess, occupying both right and left lobes of the liver, no amoebae were seen, but a pure culture of the Staphylococcus pyogenes citreus was obtained. The clinical study of the cases of dysentery with reference to amoebae was equally unsatisfactory. In cases with marked symptoms both in patients confined to bed and those beginning to go about but still with persistently loose bowels, these organisms were frequently missed; while in instances ready to be discharged, they might, at certain examinations, be found to be very abundant. In morphology, the amoebae studied corresponded with the amoebae coli found in Egypt and in this country. The bacteriological study of cases of dysentery was carried out upon the fresh stools of acute and chronic cases, and with the intestinal contents, mesenteric glands, liver, etc., of cases dying and subjected to autopsy. The intestinal flora was studied in its entirety by means of plate cultures. Varieties of micro-organisms were separated.

Many of these were well-known species or occurred normally in the situations in which found. Tests with blood sera for agglutination were made, and those organisms giving positive reactions were separated for further study. Two groups of bacilli were thus differentiated: (1) Having affinities with the group of bacillus coli communis. The agglutination was variable, being constant and sensitive with the blood-serum of the same individual (host), and inconstant, and active in relatively strong solutions only, in serums from other individuals. (2) Having affinities with the group of bacilli of which the bacillus typhosus is the type. Agglutination was constant and sensitive with blood-serum of host as well as the sera of other individuals suffering from dysentery. Inactive with normal serum and serum from cases of typhoid fever, malaria and beriberi. A bacillus belonging to the second group, which is still under study, would seem to agree with the bacillus dysenteriae isolated by Shiga from cases of endemic dysentery occurring in Japan. It is regarded by us as an important factor in the causation of the dysentery of the Philippine Islands. Experiments in immunization of animals and the production of vaccine are in progress. (b) *Typhoid Fever.* The total number of cases of typhoid fever in the hospitals during May, June and July was far below that of dysentery; the number of deaths also was less. It was, however, a frequent affection among Americans. The examination of the blood, microscopically and with the Widal test, was of the greatest help in diagnosis. The disease came to autopsy presenting the classical intestinal lesions and also in atypical forms. In the small number of autopsies made upon those dead of this disease, several instances of slight intestinal involvement or even entire escape were met with. These cases would have remained very obscure or even undetermined except for the Widal reaction and bacteriological examination. In some instances the typhoid bacillus was found widely disseminated throughout the body, the autopsy being made immediately after death. (c) *Malarial Fevers.* A large proportion of the cases were sent in from the field and outlying military stations where examinations had to be hastily made, as instances of "malaria" or "intermittent fever" turned out to be cases of other diseases (typhoid fever, dysentery, etc.). A number of true cases of malarial fever were, however, met with, and in the blood of these the characteristic parasites, identical with those occurring in other places in which studies of the blood have been made, were found. No quartan parasites were met with, but cases of quartan affection doubtless exist. Typical infections with the "tertian" and "aestivo-autumnal" varieties of the parasite were encountered by us, and by microscopists among the Army physicians in the Reserve Hospitals and on the *Relief*. One of the fatal cases of malaria was complicated with acute lobar pneumonia. The cases of "calentura perniciosa" which occur in Mindoro, Mindanao and in certain parts of Luzon should be studied as soon as these regions are accessible. The Archipelago is favorable also for the study of the relation of mosquitoes and other insects to malarial infection. Some of the malarial cases were undoubtedly *recidives*, imported from Cuba or elsewhere. A very small number of deaths were referable to malaria. Two instances of acute malarial infection came to us for autopsy. On the other hand, several instances of malarial pigmentations of the organs, in persons dying from other diseases, were encountered. Parasites in the latter cases were absent. These men had, as a rule, been in Cuba or Porto Rico during the Spanish war.

(d) *Tuberculosis.* A number of cases of pulmonary tuberculosis developed among the soldiers in the American troops. A definite history of exposure to wet and various hardships was elicitable in many of these cases.

(e) *Dengue.* At Cavite there occurred a large outbreak of an epidemic fever of short duration (a few days), known locally as Cavite fever. Almost all who remained in Cavite for any length of time were attacked. Second and third attacks were common. Muscular pains were severe in some cases and not in others. A slight exanthem was present in many of the cases. Flushing of the face, restlessness and general malaise accompanied the fever and rapid heart action. Malarial parasites were not present in the blood, nor did the serum from such cases agglutinate cultures of the typhoid bacillus. The epidemic is regarded as one of Dengue.

(f) *Tropical Ulcers.* A number of the American soldiers suffered from a form of indolent ulceration, locally known as "tropical ulcer." These ulcers occurred singly sometimes, but were more often multiple. They began as small pustules, which gradually extended. They were most frequent among those who had been compelled to make long marches through swampy districts, and the patients themselves attributed the ulceration to "poisoning" in the marshes.

(g) *Wound Infection.* Our experience with wound infections was rather limited. The other problems undertaken, regarded as more important as bearing on the general question of disease and its causation in the Islands, left but little time and opportunity to attack this interesting subject. Certain observations of interest were made. Pyogenic infections due to the common pus cocci occurred. In a small number of gun-shot wounds causing compound fractures emphysematous gangrene occurred and the bacillus aerogenes capsulatus was isolated. In one instance of compound fracture of the tibia, a spore-bearing bacillus was associated with the bacillus aerogenes capsulatus. It was found in cover-slip preparations from the original wound and in the first set of cultures. It could not be further transplanted and hence was not identified. In two other cases was the bacillus aerogenes met with, one a case of peritonitis following infection of the intestine from an incarcerated hernia, and the other also a case of peritonitis but secondary to perforation of a typhoid ulcer of the intestine. The army surgeons were enthusiastic as to the adequacy of the "First-Aid Package" in limiting the number of wound infections.

Climatological and Hygienic Conditions.

The climate is that of continual summer. There is a wet season (S. W. Monsoon) and a dry season (N. E. Monsoon). The hottest period is at the end of the dry and the beginning of the wet season—precisely the period of our visit. The climate from November to March is said to be delightful. In the worst season of the year the climate is very trying, and especial precautions are to be taken if Americans are to keep

FIG. 1.

FIG. 2.

FIG. 2.

FIG. 3.

FIG. 3.

To illustrate Dr. Osler's Case of Multiple Gangrene in Malarial Fever.

well there. The extremes of temperature are not great, but the constancy of the high temperature, together with a high degree of humidity, makes the climate peculiarly enervating. We were interviewed at length while in Manila, officially by the U. S. Philippine Commission, with regard to climate and the hygienic precautions to be observed, as well as with regard to other medical problems in the Islands. The climatic conditions and the hygienic precautions to be taken will form the subject of a fuller report to be made later.

The above represents, briefly stated, the results achieved by your expedition sent to the Philippines. As will be patent to you, not a little yet remains to be done before the scientific portion of the work is completed. This portion of the report is for the present only hinted at or withheld until it shall have been finished. It is the intention of your commissioners to make careful studies of the material relating to beri-beri, dysentery, malarial and typhoid fevers, leprosy, and the bubonic plague, which has been collected. These studies, with the exception of that relating to dysentery, will be carried out upon preserved material, and the labor involved, which has been divided between Baltimore and Philadelphia, will necessitate that some time must elapse before the finished report is forthcoming. The task of completing the study of the bacillus isolated from cases of dysentery has been assigned to Dr. Flexner, who was principally engaged with that theme during the residence in Manila. In order to carry out the experiments as designed, an outlay for experimental animals and their maintenance will need to be made. It is known to you that the original sum so generously contributed by friends of the University and appropriated for the use of your commission, has been exhausted, and that private means have been drawn upon to defray a part of the expense involved. We would respectfully draw attention to this fact and to the further expenses to be incurred, and request direction as to your wishes regarding these matters.

We wish to express our deep gratitude to Messrs. Flint and Gay, whose untiring efforts during our residence in Manila made it possible to accomplish far more than we could have done unaided. It is a pleasure to acknowledge also many kindnesses on the part of Mr. John W. Garrett.

That we are deeply indebted to the officers in the Medical Service of the U. S. Army and Navy for opportunities and aid, is evident from the report preceding. Courtesies and kindnesses extended by various citizens of Manila, European and native, are here also gratefully acknowledged.

Very respectfully,

SIMON FLEXNER,
LEWELLYS F. BARKER.

A CASE OF MULTIPLE GANGRENE IN MALARIAL FEVER.

(WITH ILLUSTRATIONS.)

BY WILLIAM OSLER, M. D., *Professor of Medicine, Johns Hopkins University.*

There are three groups of cases of multiple gangrene:

(1.) *Raynaud's disease.*—There have been previous well-marked vascular disturbances in the extremities (syncope, asphyxia or hyperæmia), the gangrene is very often symmetrical, is usually slight in extent and limited to the fingers or toes, more rarely to the ear-tips or nose.

(2.) *Multiple spontaneous gangrene of limbs.*—In young or middle-aged persons, without any obvious cause, massive gangrene of one, two or three extremities occurs. Many illustrations of this are recorded in the literature.

(3.) *Multiple spontaneous gangrene in association with the acute infections.*—In measles, typhoid fever, typhus fever, scarlet fever, diphtheria and malaria, local gangrene may occur. There are multiple patches, not symmetrical, and the skin and subjacent tissues are more frequently affected than the extremities. While of course the phenomena of Raynaud's disease may occur as a sequence of any of the specific fevers, a large proportion of all the cases of local gangrene occurring during or after one of the fevers have nothing whatever to do with this affection.

The relationship between malarial fever and Raynaud's disease is believed to be very close. Many references are given to cases (a majority from French sources) by Barlow in his article in Allbutt's System, and more fully by Monro in his excellent monograph on the disease. (Glasgow, *James Maclehose & Son*, 1899.) Altogether, in the cases he has collected, there were only 8.3 per cent. with malarious antecedents. I have looked over the notes of cases of Raynaud's disease which I have seen in Baltimore, nine in number, and I do not find malaria to be related as an etiological factor in any one of them, nor, so far as I know, in our very large series of cases of malaria during the past ten years has there been a single instance of Raynaud's disease.

The following case is a very remarkable illustration of multiple gangrene occurring in a case of æstivo-autumnal malaria. Similar cases have been reported in the literature, and are referred to by Monro in his monograph (page 96), but they seem to be exceedingly rare.

CLINICAL SUMMARY.—*Malaria when six years old—typhoid fever twice—last attack four months before onset of present illness—illness in the middle of October, supposed to be influenza, but more probably malaria—on November 2nd, onset of spots of gangrene in various parts—rapid extension—condition on admission as shown in the figures—complexion muddy—spleen enlarged—blood showed very many æstivo-autumnal organisms—temperature slightly elevated at first—subsequently no fever—rapid recovery.*

P. W. B., aged 23, bar-tender, admitted to Ward E, Thursday, November 29, 1899, complaining of sores on various parts of his body.

Family history.—Mother died of consumption. No history of rheumatism or of any special disorders of the skin.

Personal history.—As a child he had measles, mumps and whooping cough. When six years old he had malaria. Five years ago he had a very severe attack of typhoid fever, after which he had an abscess in the abdominal wall, which opened spontaneously and discharged for two months, leaving a large scar. He had at the same time many boils. Last year he went south with the Fifth Regiment, and in August he had a second attack of typhoid fever, and was ill for two months. He has had gonorrhœa twice; has never had lues. He has used tobacco freely; whiskey and beer in moderation.

Present illness.—The patient has been living in Baltimore this autumn, and has been very well until the middle of October, when he was ill in bed for nearly two weeks with pains in the back and general weakness; no fever, no chills, no herpes. The doctor called it influenza. The patient got up and was about for a few days, when, on November 2nd, just twenty-seven days ago, he noticed blebs about half an inch in diameter on both hands, which were slightly swollen. The next day a mottled area appeared on the instep of the left foot. It had a bruised appearance. A similar one appeared on the buttocks and on the dorsum of the right foot. Other spots came in the situation to be subsequently mentioned.

The hands and feet became very much swollen. The blebs broke and discharged a dark fluid; the skin around the affected areas was very red. There was no itching. He had some pain at night. Ten days ago he had slight chilly feelings. There had been no redness, nor swelling, nor blueness of the fingers or toes, and there had been no numbness or tingling. The urine had been clear. Dr. Futcher made the following note on the day after his admission.

"The patient is a large-framed, well-nourished man; complexion rather sallow. The skin of whole body is pigmented, markedly so about nipple and umbilicus, to slight extent about genitalia; no increase in either axilla. The lips and mucous membranes are of fairly good color; no pigmentation of mucous membranes. Over dorsum of left hand, just behind knuckles, there are four whitish scars, the result of healing vesicles. Over the ring, middle and little fingers there is a brownish-yellow discoloration of the skin which is gradually peeling off where the blebs are healing. On palmar surface of same fingers the skin is raised in large blebs. The skin has a brownish-yellow color, and over the ring finger is quite gangrenous, and there is involvement of the subcutaneous tissue. The thumb and index finger are not involved.

"*Right hand.*—The dorsum of hand is unaffected. On the dorsal surface of first and second inter-phalangeal joints of index, middle and ring fingers the skin is thickened, brownish in color, no vesicles. Over the hypothenar eminences on palm is a large area, measuring 5x6 cm., in which the skin is loosened from the subjacent tissue, markedly discolored, and at one point a serous fluid is exuding. The palmar surface of all four fingers shows a gangrenous condition of the skin with vesiculation and oozing of fluid, most extensive on ring finger, where the process invades the palm of the hand.

"*Right foot.*—Over dorsum of foot, below ankle, is an area, 5x3 cm., in which the skin is gangrenous and exceedingly black; slough still adherent to adjacent tissue; surrounding skin, slightly pigmented. Over the heel there is an area of brown, discolored, thickened skin, measuring 5x6 cm.; this area is sensitive to the touch.

"*Left foot.*—Below external malleolus is an area, 5x3 cm., of gangrenous and sloughing black skin.

"*Left buttock.*—Just over the spine at the junction of the dorsal and lumbar regions there is a patch of dry gangrenous skin 1½x2 cm. Over left gluteal region there is an irregular gangrenous patch, quite dry, measuring 4½x2 cm., slightly sensitive to pressure.

"*Occiput.*—Over the lower part of occiput, on each side, there are two areas in which the scalp has a gangrenous appearance, slight oozing of fluid causing matting of hair."

Though the history did not suggest malaria, as in the routine examination of the abdomen the spleen was found to be considerably enlarged, the blood was at once examined, and very large numbers of æstivo-autumnal organisms were found. The crescents were in unusually large numbers. Cultures taken from the blood proved negative. There was no leucocytosis, and the differential count was practically normal. The eosinophiles were only 2 per cent. The patient was at once given quinine in full doses, and he began to improve rapidly. The larger sloughs were treated with linseed poultices made with bichloride solution. Crescents and ovoids persisted in the blood for some time, though by December 15th they were rapidly disappearing. On December 14th, the gangrenous patches on both hands had healed. On the feet the sloughs had separated, leaving deep ulcers, the sheaths of the tendons being exposed. The urine examinations were negative throughout. The patient had a slight rise of temperature (100°) at first; subsequently none at all. The figures from photographs, by Dr. Brownell, illustrate the condition on admission.

BENJAMIN JESTY: A PRE-JENNERIAN VACCINATOR.

By Thomas McCrae, M. B., (*Tor.*), *Instructor in Medicine and Physician in charge of the Clinical Laboratory, The Johns Hopkins Hospital.*

"That a disorder communicated to the human animal from one of the brutes should protect the former against the contagion of small-pox, is one of the most interesting facts in the whole history of medicine. How glimpses of a truth so remarkable were first revealed to the casual observation of certain peasants, and how the result of this chance observation was gradually 'matured into a rational and scientific form by a mind deeply imbued with the best principles of sound philosophy,' I have not leisure to tell you in detail."—(Watson's Practice of Physic.)

Tradition has it that there were many instances of the "glimpses" of the truth of vaccination referred to by Watson,

[*Copy of print in the Fisher Collection at the Johns Hopkins Hospital.*]

PAINTED BY M. W. SHARP. ENGRAVED BY W. SAY.

TO THE PRESIDENT, VICE-PRESIDENTS, TREASURERS, TRUSTEES, AND
MEDICAL OFFICERS OF THE ORIGINAL VACCINE INSTITUTION,

This Print of Mr. Benjamin Jesty, from a Picture in the possession of the Institution, is respectfully inscribed by their devoted Serv't,

WILL^M SAY.

Mr. B. Jesty, Farmer of Downshay, Isle of Purbeck, Æt. 70, who inoculated his Wife and Two Sons for the Vaccine Pock in 1774, from his Cows at that time disorder'd by the Cow Pock, and who subsequently, from the most rigorous Trials have been found unsusceptible of the Small Pox Having rationally set the Example of Vaccine Inoculation from his own knowledge of the fact of Unsusceptibility of the Small Pox after casual Cow Pock in his own person and in that of others, and from knowing the harmlessness of the Complaint. To commemmorate the Author of these historical truths the Vaccine Institution have procured this Portrait.—*Extract from the Minutes of the Original Vaccine Institution, Broad Street, Golden Square, September*, 1805.

London, Published Dec^r 1st, 1805, by the Engraver, 92 Norton St., Marylebone. 1737–1816.

long before the great work done by Jenner. But the majority of these lack certain proof as cases of the employment of the inoculation of cow-pox as a preventive of small-pox. However, the evidence regarding the subject of this sketch seems thoroughly authenticated, and there can be no doubt of Jesty having performed vaccination in 1774. The date of Jenner's first vaccination was 1796, although for many years before he had been making observations regarding it. The material relating to Jesty has been very fully collected by Crookshank in his work on "The History and Pathology of Vaccination," from which much of my information is obtained. Jenner appears to have regarded the account of Jesty as an invention likely to detract from the credit due to himself. But it can in no way lessen Jenner's fame. The early instances were only isolated occurrences without influence further than their own surroundings, while Jenner introduced vaccination and gave it to the world.

Benjamin Jesty was born at Yetminster in Dorset, and was a farmer. Subsequently he moved to the farm of Downshay in the Isle of Purbeck, in Dorset, situated not far from Swanage. Judging from what has come down to us concerning him, he appears to have been an eccentric man, full of quaint ways of action and speech, but with a good share of the power of observation and of sensible reflection over what he had observed. In 1774, small-pox was prevalent in his locality. He was thought to be in no danger of it himself, having had the cow-pox previously by taking it casually from the cows. This was a matter of tradition through the countryside. Some of his family were not so protected, and the fact that two of his maid-servants, who had previously had the disorder from the cows, attended patients suffering from small-pox without infection, seems to have determined Jesty to inoculate the cow-pox into his own family as a preventive of small-pox. The farmer is said to have argued thus: "For his part he preferred taking infection from an innocuous animal like the cow, subject to so few disorders, to taking it from the human body, liable to so many and such diseases, and that he had experience on his side, as the casual cow-pox was not attended with danger like the variolous infection; and that beside there appeared to him little risk in introducing into the human constitution matter from the cow, as we already eat the flesh and blood, drink the milk and cover ourselves with the skin of this innocuous animal." (Extract from the communication of Rev. Dr. Bell).

Accordingly, Jesty carried out his ideas and inoculated his wife and two sons, aged two and three years, with the cow-pox. The patients went into the fields, and the virus was taken on the spot from the teats of the cows. A stocking-needle was the instrument used; Mrs. Jesty being inoculated under the elbow, the sons above. The latter had the disorder in a favorable way, but in the course of a week Mrs. Jesty's arm was much inflamed. She had fever, and was so ill that a neighboring surgeon, Mr. Trowbridge of Cerne, was called. He said "You have done a bold thing, but I will get you through it if I can." She soon recovered perfectly. Dr. Bell states that the boldness and novelty of the attempt produced no small alarm in the family and no small sensation in the neighborhood. Fifteen years later, in 1789, the sons were inoculated for the small-pox by Mr. Trowbridge, along with others who had not had the cow-pox. At this time the inoculation of small-pox was a common procedure. The arms of the Jestys inflamed, but this soon subsided, and no fever or other variolous symptoms were observed. The unprotected individuals went through the usual course of inoculated small-pox. Subsequently Mrs. Jesty and her sons were often exposed to small-pox without taking it, while in 1805 one of the sons was inoculated for small-pox with a negative result.

It is a wonder, as Dr. Bell notes, that nothing of these cases was known to Jenner, as they would have been valuable evidence in support of his doctrines of the value of vaccination. But when one considers the means of communication of the day, it is easily understood why this experiment of a south-of-England farmer should have only become known to a very local district. Statements regarding these facts were drawn up in 1803 by Dr. Bell and Mr. Banks, the member for Corfe Castle, which is close by. These came before a committee of the House of Commons and the Jennerian Society. In 1804, the Society endeavored to get Jesty to come to London in order that they might see him and investigate the matter, but an attack of gout prevented. The following year the secretary of the society wrote:—

LONDON, *July* 25th, 1805.

Sir:—I am desired to propose to you that, provided you will come to town at your own convenience, but as soon as possible, to stay not longer than five days unless you desire it, for the purpose of taking your portrait as the earliest inoculator for Cow Pock, at the expense of the institution, you will receive 15 guineas for your expenses and the members of the establishment will be happy to show you any civility during your stay in London, on which account it is hoped you will be put to little or no expense.

I have the honor to remain, Sir.

Your obedient humble servant,

WILL SANCHO.

Mr. Jesty accepted the invitation and journeyed to London, taking one of his sons with him. It is stated that they met with great attention from the members of the Jennerian Society who were much amused by Jesty's ways. Some idea of his characteristics is given by various incidents reported. His family tried to induce him before coming to dress more fashionably, but he said "he did not see why he should dress better in London than in the country." Mr. Colson writes that on his return he gave a very unfavorable account of the metropolis, but said there was one great comfort there, viz., that he could be shaved every day. While there he was inoculated for the cow-pox, and his son for the small-pox, but neither took effect. This was done by the Society probably for the sake of their investigations. Mr. Jesty was presented with a pair of very handsome gold-mounted lancets, and his portrait was taken by Mr. Sharp; but he proved an impatient sitter, and it is said would only be kept quiet by Mrs. Sharp's playing on the piano for him. The portrait was presented to the Vaccine Institution, and is said by Crookshank to be now in the possession of Jesty's great grandson. There is an excellent copy of it in the Fisher collection of medical portraits in the Hospital.

The members of the Jennerian Society drew up a statement which among other things testified—"that Jesty had given decisive evidence of having vaccinated his wife and two sons in 1774, who were thereby rendered unsusceptible of the small-

pox as appears from their frequent exposure and inoculation. He was led to this from knowing the common opinion regarding the protection of cow-pox against small-pox and that he himself for the same reason was incapable of taking small-pox and from observation of the same thing in others. He believed that cow-pox was free from danger and that by it he should avoid various human diseases, such as the evil, madness, lues and many bad humors as he called them." The year after his visit to London, Jesty seems to have suggested an application for some pecuniary reward, but as the secretary of the Vaccine Institution considered any grant improbable, the matter was dropped.

Last summer, in company with Dr. Osler, a visit was made to the locality where Jesty lived. To-day, the ordinary native of the district does not know the name of Jesty. His farm, Downshay, is in the Isle of Purbeck in the county of Dorset. It occupies a delightful situation in a valley between the Purbeck Hills and Nine Barrow Down, a few miles from Corfe Castle. Leaving the Kingston road, the house is reached by a rough way through the fields with many steep descents. It is not seen at first, indeed we did not look for it, as our whole attention was centred on the superb outlook. To the left, in the setting sun, were the ruins of Corfe Castle guarding the gateway to the Isle of Purbeck; to the right, Swanage and its bay, with far off on the horizon the white cliffs of the Isle of Wight (The Needles); while across the valley was the fine sweep of the Nine Barrow Down. Encircled by trees and in a depression, we did not see the house until we reached the barnyard, when we were greeted by a jolly looking dairy-man who was just driving out his herd. The entrance to the garden was through a fine old stone gateway with pillars of a quaint design. The house was of a type common on the island, of two stories and well built, looking very fresh and clean after its more than 250 years. The date of building, 1635, was carved on the side of the house.

From the farm-house, a drive of a few miles brings one to the village of Worth Matravers where Jesty is buried. This is situated on the point of land known as St. Alban's Head. Here, in the parish church, a picture of Jesty with a suitable inscription is found hung up in the vestry. In the church-yard adjacent is his grave with that of Mrs. Jesty alongside. His tombstone bears this inscription:—

SACRED

TO THE MEMORY

OF

BENJ^{N} JESTY (OF DOWNSHAY)

WHO DEPARTED THIS LIFE

April 16th, 1816

Aged 79 years.

He was born at Yetminster in this County and was an upright honest man, particularly noted for having been the first person (known) that introduced the Cow Pox by inoculation and who, from his great strength of mind, made the experiment from the cow on his wife and two sons in the year 1774.

One feels that Jesty was in advance of his generation, and a man who saw probably better than he knew. He did his little to blaze out the path which has since become a highway. That he could do but little to advance vaccination, his circumstances decided. To another was the honor of giving vaccination to the world.

HÆMOPHILIA IN THE NEGRO.

By Walter R. Steiner, M. D.

Although the disease hæmophilia appears to have been known since the time of Albucasis,[1] the great Arabian physician, yet the two, or possibly three, cases reported before Fordyce's[2] short article appeared, contain no real contribution to the study of this disease. In the year 1784, its hereditary character was pointed out by Fordyce. Nineteen years later the term "bleeder" was given by Otto[3] to those who had hæmophilia, and in addition to this he showed the general immunity of the females and their tendency to transmit the bleeding disposition to their offspring. Following these writers a number of American and German physicians did much in contributing to the knowledge of this disease. Schönlein[4] named it "hæmophilia" about 1828, and gave it a place in his text-book on "Pathology and Therapeutics." Its later history is closely associated with the name of the British physician J. Wickham Legg.[5]

The first attempt to collect all of the reported cases was made by Naas,[6] in Germany, in a paper published in 1820. He also endeavored to give a systematic description of the affection. This work was followed by other statistical articles by Lange,[7] Grandidier,[8] and Dunn,[9] the last appearing in 1883.

Many cases have been reported among different races. The Anglo-Germanic race has furnished most of them, followed by the Latin, Scandinavian and Teutonic races. Individual instances have also been given by Heymann[10] in a Mohammedan family from Palembang, on the Island of Sumatra, where this diathesis was found in three generations, and by Koch[11] in a possible case of hæmophilia in a creole from Port of Spain, Trinidad. But in all the literature on the subject there is but one well-defined case in the negro mentioned.

This case was reported by Dr. Hadlock[12] before the Academy of Medicine of Cincinnati, on November 16, 1874. The patient was a mulatto boy, aged seven years, who was found, on the doctor's visit, to be bleeding from the mouth. On examination Dr. Hadlock considered the hæmorrhage due to a decayed snag of a tooth which had become loosened. The tooth was accordingly extracted with the result that the hæmorrhage became alarming in character. A compress steeped

in a solution of the persulphate of iron checked it for a time, but on the next day it seemed to be more violent than ever. The bleeding point was then cauterized and astringents were also given, all of which succeeded in arresting the hæmorrhage temporarily. It recurred again, however; all efforts to check it were in vain, and the boy died in forty-eight hours. "On inquiring into the history of the boy's family" Dr. Hadlock found "that many of its members had died from hæmorrhage from slight wounds. An uncle had cut himself with a scythe and died in consequence. His father had received a slight scratch from a briar and bled to death."

The following case, which was admitted to the Johns Hopkins Hospital on April 10, 1899, is consequently the second to be recorded in the negro race.

Alverta W., aged 14 years (Medical History, No. 9764), complains of hæmorrhage from the nose and mouth, and headache.

Family history (obtained mostly from patient's mother).—Father, mother and two brothers, alive and well; a sister died of throat trouble, aged 6 years. No history of tuberculosis, rheumatism, or any neoplasm in the family.*

Hæmophilic history.—Patient's great-grandmother was a bleeder from early childhood till her death, June 8, 1898, from old age and la grippe. Her doctor frequently told her the bleeding was due to the fact that she had "too much blood." Patient's mother (Alverta S.) says she can distinctly remember the doctor coming about twice a year to remove some of this "too-much blood," by cupping or leeches. The great-grandmother had fourteen children, ten boys and four girls. Of these, the patient's mother remembered the names of eleven only, seven boys and four girls. (See family tree.) The seven known personally to the patient's mother were all of them bleeders, and are now all dead but William T. One of the sons, Mose, died from hæmorrhages from the nose and mouth in 1895, in Philadelphia, at the age of thirty-four years. He had had hæmorrhages from early childhood, but during his last five years they were more severe. The doctor told his wife he did not have consumption, but what diagnosis was made of the case is unknown. The patient's grandmother used to bleed from the nose occasionally. She died December 30, 1898 (aged 60), of "asthma, dropsy, Bright's disease and heart disease."

Patient's mother frequently bled from the nose till her sixteenth year. She has had no attacks since.

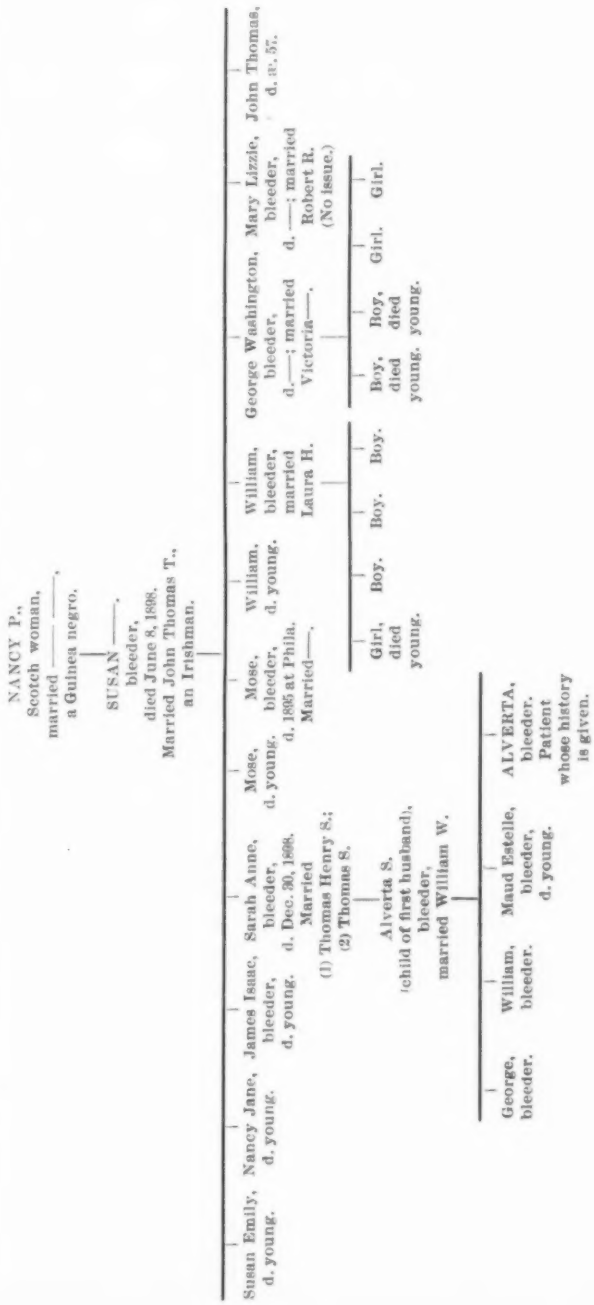
Patient's brothers have occasional attacks of epistaxis, and bleed considerably from the slightest cuts and bruises.

Past history.—As a child, had measles, mumps and whooping cough. "Ulcerated sore throat" of two weeks' duration one year ago. She gives a somewhat indefinite history of malaria in the spring of 1896. No chills, but thinks she had chilly sensations and fever. Was living in Baltimore at the time.

She has been a sufferer from severe frontal headaches ever since she can remember.

Menstruation has not yet been established.

Hæmophilic history.—Has bled easily from the slightest scratches since early childhood, but the amount of blood lost


NANCY P., Scotch woman, married ——— ———, a Guinea negro.
SUSAN ———, bleeder, died June 8, 1898. Married John Thomas T., an Irishman.
Susan Emily, d. young.
Nancy Jane, d. young.
James Isaac, bleeder, d. young.
Sarah Anne, bleeder, d. Dec. 30, 1898. Married (1) Thomas Henry S.; (2) Thomas S.
Alverta S. (child of first husband), bleeder, married William W.
George, bleeder.
William, bleeder.
Maud Estelle, bleeder, d. young.
ALVERTA, bleeder. Patient whose history is given.
Mose, d. young.
Mose, bleeder, d. 1895 at Phila. Married ———.
Girl, died young.
William, d. young.
William, bleeder, married Laura H.
Boy. Boy. Boy.
George Washington, bleeder, d. ———; married Victoria ———.
Boy, died young.
Boy, died young.
Girl.
Girl.
Mary Lizzie, bleeder, d. ———; married Robert R. (No issue.)
John Thomas, d. æt. 57.

* One brother, William W. (Surgical History, No. 9080), was later admitted to the Johns Hopkins Hospital, on the surgical side, complaining of a swollen right ankle. He gave the history of an attack of gonorrhœa one month previously. The swelling in the ankle seemed located in the tissues about the joint, there being apparently no effusion in the joint itself. The diagnosis of gonorrhœal arthritis was made. Patient left the Hospital July 3rd, against advice, being only slightly improved. In view of the occurrence of joint troubles in hæmophilia, added interest is given to this case.

has been very slight in every instance. No attacks of epistaxis till present illness.

Present illness.—About two and a half months ago, she woke up one morning and found her pillow and night-dress bathed in blood, which came from her nose. By eating some salt, she checked the hæmorrhage after she had bled about a cupful. Since then she has not enjoyed her customary good health, but has felt very weak and drowsy. Five days prior to her admission to the Hospital, she was awakened by an attack of epistaxis. It started with a sudden gush of blood, but soon amounted to only a slight ooze, and so continued for three days. Salt was also used on this occasion, but to no purpose.

Two days after this, she found she had had her third nose-bleed, during the night. It was very slight, however, and she was not awakened by it. In all, she thinks she lost about "half a wash-basin of blood."

Her only symptom in these attacks has been constant frontal headaches.

No bleeding from, or swelling of her gums, has ever been noticed, nor has any blood ever been detected in her urine or fæces. On admission, temperature, 100.4°; pulse, 104; respiration, 24.

Physical examination.—Patient is a quite well-developed, dark-skinned negro girl. Lips and mucous membranes are rather pale. Her tongue has a reddened, glazed appearance. The gums are swollen, and inflamed, but no bleeding points can be seen, nor can the gums be made to bleed on pressure.

Thorax.—Negative on examination. Pulse 100 to the minute, regular in force and rhythm, good volume and tension.

Abdomen.—Negative.

Extremities.—Negative.

No petechiæ or purpuric spots seen anywhere.

Blood examination negative for malarial parasites. Leucocytes, 10,500. The day following admission, a small herpetic area was noted on her lower lip. The nose examination was negative. Four purpuric spots, about 2 mm. in diameter, were seen about the right clavicle.

Blood examination.—Coagulation time, between 3-4 minutes; red blood corpuscles, 5,088,000; white blood corpuscles, 4,500; hæmoglobin, 60 per cent.; blood platelets, 212,000.

On the third day a few additional purpuric spots were seen about the flexor and extensor surfaces of both arms and legs, at the elbows and knees. For the past two nights there has been slight bleeding from her gums.

On April 14th, the following note was made by Dr. Futcher: Patient's gums are still distinctly swollen, but less so than on admission. They bleed easily on pressure.

Seven days later the gums were considerably less swollen, and could not be made to bleed on pressure. At the time this note was made, patient had been up and about the ward for four days.

Blood examination, April 23.—Red blood corpuscles, 5,020,000; white blood corpuscles, 6,000; hæmoglobin, 47 per cent.; blood platelets, 280,000.

The patient improved wonderfully during her stay in the Hospital, and was discharged April 24th. No more petechial spots were noted after those seen April 12th, and those then seen quickly vanished.

Urine.—On entrance the urine was straw-yellow in color, clear, 1021 in specific gravity, faintly acid in reaction, negative for sugar, but contained a trace of albumen. There was a white flocculent precipitate. Microscopically a few hyaline and granular casts were seen as well as a number of epithelial cells, and calcium oxalate crystals. Mucous strands were also seen. The urine gradually cleared up, and on the last examination (April 21), no casts nor albumen were found. Her temperature nine hours after admission rose to 101.2°, but gradually fell till the next day, when it was 99.8°. From this time on there were daily elevations, the highest point reached being 100.7° on April 14th.

Treatment.—Patient was given calcium chloride (grs. xv t. i. d.), a drug which was first introduced by Wright[13] for the treatment of this disease. It was given in the following prescription, as advised by Wright:

R	Calcii chloridi, - - -	ʒiii.
	Aquæ chloroformi - - -	ʒii.
	Aquæ aurantii florum, - -	ʒiv.
	Aquæ q. s. ad. - - -	℥vi.
	M. S. ℥ss. t. i. d. p. c.	

It is interesting to note that both the cases of hæmophilia were not in patients of pure negro blood.

In a study of the family tree of the second case we find:

(1.) The extraordinary fertility of bleeder's families (a fact first pointed out by Wachsmuth[14]) is well shown in the family of our patient's great-grandmother. Five of her children died early, and none of the others, save one, now survives.

(2.) Of these, three children out of the six known to patient's mother died young. This accords with the fact that a large percentage of the bleeders die early.

(3.) Contrary to the usual statement, both the males and the females seem to have been bleeders, but only one (a male) died from the effects of hæmorrhages.

(4.) The preponderance of the males is seen in two of the families named. This excess of sons over daughters has been given as a reason for the rarity of this disease.

(5.) The bleeding tendency in each instance was transmitted through the females.

In conclusion, I wish to thank Dr. Osler for allowing me to report this case.

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2. Fordyce: Fragmenta Chirurgica et Medica, Lond. 1784, p. 41.

3. Otto: Medical Repository, N. Y., 1803, VI, 1-4.

4. J. Wickham Legg: Article on Hæmophilia in Allbutt's System of Medicine, Vol. VI, p. 548. Schönlein's account of the disease first appeared in his "Vorlesungen" which afterwards formed his text-book on pathology and therapeutics.

5. J. Wickham Legg: (a) A Treatise on Hæmophilia, Lond., 1872, 158 pp.; (b) Report on Hæmophilia, St. Barth. Hosp. Rep., Lond., 1881, XVII, pp. 303-320; and other articles.

6. Naas: Archiv. f. med. Erfahr., Berl., 1820, 1, 385-434.
7. Lange: Zeitschr. f d. ges. Med., Hamb., 1850, XLV, 145-231.
8. Grandidier: Schmidt's Jahrb., Leipz., 1863, CXVII, 329-341. Ibid., 1872, CLIV, 81-102. Ibid., 1877, CLXXII, 185-193.
9. Dunn: Am. Journ. of Med. Sc., Jan., 1883.
10. Heymann: Archiv f. path. Anat., etc., Berl., 1859, XVI, 182-183.
11. Koch: Brit. M. J., Lond., 1890, 1, 1301.
12. Hadlock: Clinic, Cincin., 1874, VII, 241.
13. Wright: Brit. M. J., 1891, II, 1306.
14. Wachsmuth: Zeitschr. d. deutsch. Chir. Ver., Magdeb., 1849, III, 459-517.

SUMMARIES OR TITLES OF PAPERS BY MEMBERS OF THE HOSPITAL AND MEDICAL SCHOOL STAFF APPEARING ELSEWHERE THAN IN THE BULLETIN.

ROBERT L. RANDOLPH, M. D. Acoin: A New Local Anæsthetic.—*The Ophthalmic Record*, Chicago, August, 1899.

Acoin in solutions of 1:100 and 1:300 produces satisfactory anæsthesia in an unirritated eye in about the same length of time as cocaine.

2. In more than one case where the eye was congested, repeated instillations of acoin were inadequate to produce satisfactory anæsthesia.

3. Inspection of the cornea with a high-power lens failed to show any defects in the epithelium after its use.

4. Acoin has no effect upon accommodation.

5. It has no effect upon the size of the pupil.

6. It does not increase the intra-ocular tension.

7. Several experiments demonstrated that the staphylococcus pyogenes albus did not grow in agar which contained acoin in the proportion used in the clinic, and, furthermore, that exposure of this organism to the action of acoin for twenty-four hours was followed by death of the organism. This would look as though acoin were not only an inhibitor of the growth of this organism, but that it also killed this organism after a certain length of time. It is evident that conclusions drawn from this limited experience with acoin may have to undergo more or less modification with further trial.

——— Expulsive Intra-ocular Hæmorrhage after Preliminary Iridectomy for Cataract.—*The Ophthalmic Review*, London, December, 1899.

The case reported was an old lady of 76. She was exceedingly nervous and refused to enter the hospital, but preferred remaining at home and being nursed by members of her own family. From the uniformly favorable results attending preliminary iridectomy for cataract, this operation was first performed with intention of removing the lens a few weeks later. The operation was perfectly smooth. On the morning of the third day, it was found that the anterior chamber was almost completely obliterated, and that the lens was pressed so far forward as to force the iris against the posterior surface of the cornea. The condition grew worse, till the lens was almost forced through the old wound, when it was thought best to remove the lens. This was done and immediately there was a flow of bloody vitreous. Oozing kept up for four days. Light perception was gone, and in six months the eye had shrunken to half its original size. Six months later glaucoma appeared in the other eye. She was unwilling for iridectomy, and with the history of the fellow eye it was thought best not to urge such a measure. The development of glaucoma in this eye justifies us in concluding that the same condition was present, in a less advanced stage, in the right eye at the time of the preliminary iridectomy. The case is of exceptional interest inasmuch as the hæmorrhage followed iridectomy, for, as a rule, such catastrophies are seen only after removal of the lens. It is interesting to note the fact that intra-ocular bleeding did not commence till hours after the iridectomy. The nature of the trouble was not suspected till the morning of the third day, when the evidence of pressure behind the lens was unmistakable, so that bleeding must have been going on intermittingly for days before the lens was removed. The constant reduction of intra-ocular tension caused by the yielding of the eyeball at the point of the wound would explain the persistent character of the hæmorrhage. It is needless to add that we undoubtedly had in this case senile degeneration of the blood-vessel walls—so strong a predisposing cause to such results.

F. H. VERHOEFF, Ph. B., M. D. Shadow Images on the Retina.—*Psychological Review*, January, 1900.

The usual pin-hole experiment is produced by pricking a small hole in a card, which is then held before the eye, but within the point of distinct vision. Under these conditions, if a pin is held between the hole, which serves as a source of light, and the eye, it casts an erect shadow upon the retina, and this shadow is projected as an inverted image of the pin. This experiment was described and explained by Le Cat in 1740. It is possible, however, that he was not the first to describe it, for he does not, in his work, claim that the experiment was original with him.

To show the dependence of the position of the projected image upon the relative position of the pin-hole, the experiment may be modified in the following interesting way. If, for instance, the eye is focused for the near point and the pin-hole is held beyond this point, the shadow of an interposed pin will appear erect. Under these conditions, if the pin-hole is gradually brought closer to the eye, the image of the pin becomes more and more blurred and finally disappears when the hole is at the near point, that is, when the eye is accommodated for the source of light. If the hole is brought still nearer, the original experiment is reproduced, the image of the pin again appears but is now inverted. This experiment is rendered easier if the accommodation is assisted by a convex lens, one of about ten diopters being very convenient. The lens is held close to the eye and the pin in front of the lens, or better, immediately behind it. Then if the pin-hole is placed beyond 10 cm. from the supposedly emmetropic eye, it will appear out of focus and the shadow will be upright. As it is brought closer, the phenomenon just described takes place.

If a sheet of white paper or a piece of ground glass is taken, and a small black spot is made upon it about the size of a pin-head, and this spot is used in place of the pin-hole in the above experiment, a white streak will be seen crossing the black spot. The phenomenon is best obtained without a lens, and is not an easy thing for most persons to see, since it requires that the accommodation shall be relaxed at will. This white shadow behaves in exactly the same manner as does the black shadow in the pin-hole experiment—under the same conditions it may be seen upright, inverted, or be made to disappear. The experiment should be conducted in a good light, and a piece of white paper about five centimeters square should be used. This phenomenon may also be obtained with a photographic camera.

The explanation of this phenomenon lies in the fact that the black spot, under the conditions mentioned, produces only a blurred image upon the retina, and while the interposed pin reduces the illumination of the margins of the spot, it has no appreciable effect upon the middle of the latter, the resulting difference in illumination thus producing the appearance of a white streak.

If a sufficiently large spot is used, it will be noticed that on relaxing the accommodation, the center (of its image) appears much darker than the rest of the image. This is due to the fact that as the spot is made larger it cuts off more and more rays which otherwise would have reached the center of its image, and when it is as large as the pupil, it cuts off all the rays parallel to the primary axis, thus producing a small spot in the center of its image totally devoid of light. But even when the spot is much less than half the size of the pupil, the image appears darker in the center, since many rays will even then be cut off from the center of the image. This circumstance explains the fact that if a moderately large black spot is used for the shadow experiment, the white shadow of the pin is broken by a dark central spot into two white lines, somewhat resembling crescents. If a large black spot with a small white one in the center is used, the appearance of these two crescents may be obtained, and in addition the usual black shadow is seen over the central white spot.

If, in place of a spot, a black line is used, the pin will produce a white line running down the middle of its image; the shadow in this case is more marked and more easily obtained than when a small black spot is used. Two lines drawn at a slight angle to each other, will give a bend in the white shadow at their intersection, but the shadow leaves one or both of the lines at a certain distance from this point. When a narrow red line is used instead of a black one, and a lens is employed to aid the eye, the white shadow takes on a greenish or bluish color. By the use of a lens a narrow line may be so blurred as not to be seen, but a pin in front of the eye decreases so much the amount of light reaching the lateral portions of the image on the retina, as to produce the appearance of a well-defined white shadow. The same thing is also true for a point.

Scheiner's experiment in which two pin-holes placed close together are held before the eye and a double image of a pin is produced, may be explained in the same way as the white shadow just considered, since the two images obtained of the pin may be regarded as one image with a white shadow down its middle produced by the portion of the card-board between the two pin-holes.

When simply blurring a line by relaxing the accommodation, it can be noticed that if the line is not too large, one can always obtain a white line running down its middle, and within this line a faint dark line. In the case of a small black spot, a white spot is obtained in the center of its blurred image. This is probably due in most part to the denser and probably less transparent nucleus of the crystalline lens shutting off more rays than the rest of the refractive apparatus of the eye. This appearance is not produced by a photographic camera and hence must be mainly due to some such peculiarity of the eye as that suggested. It is possible, however, that the positive aberration of the eye may play some part in its production.

THOMAS R. BROWN, M. D. Recent Work in Typhoid Fever.—*Maryland Medical Journal*, January, 1900.

ARTHUR W. ELTING, M. D. The Antitoxin Treatment of Tetanus.—*Albany Medical Annals*, January, 1900.

T. CASPAR GILCHRIST, M. D. Progress in Dermatology.—*Maryland Medical Journal*, January, 1900.

WILLIAM G. MACCALLUM AND THOMAS W. HASTINGS, M. D. Acute Endocarditis caused by Micrococcus Zymogenes (Nov. Spec.), with a Description of the Micro-Organisms.—*Journal Experimental Medicine*, September-November, 1900.

WILLIAM OSLER, M. D. The Home Treatment of Consumption.—*Maryland Medical Journal*, January, 1900.

——— A Rhode Island Philosopher (Elisha Bartlett.)—*The Boston Medical and Surgical Journal*, January, 18 and 25, 1900.

STEWART PATON, M. D. Certain Essential Points in the Technic of Staining Nerve-Cells.—*Philadelphia Medical Journal*, January 13, 1900.

ROBERT REULING, M. D. Pathology and Bacteriology.—*Maryland Medical Journal*, January. 1900.

WILLIAM R. STOKES, M. D. Recent Advances in the Study of Tuberculosis.—*Maryland Medical Journal*, January, 1900.

HUGH H. YOUNG, M. D. Recent Reports on the Operative Treatment of Hernia.—*Maryland Medical Journal*, January, 1900.

PROCEEDINGS OF SOCIETIES.

THE JOHNS HOPKINS HOSPITAL MEDICAL SOCIETY.

Exhibition of Medical Cases.—DR. FUTCHER.

During the past three or four months we have had a number of interesting cases of embolism and thrombosis in the medical wards. A brief report of these cases may be of interest.

CASE 1. Thrombosis of the left external jugular subclavian and axillary veins, associated with mitral stenosis, with subsequent embolism of the left popliteal artery.

One of these cases was referred to, at a previous meeting, by Dr. Welch when speaking of thrombosis of the veins of the upper extremity associated with heart disease. The patient, a woman aged 35, had had an attack of chorea when seven years old, and previous to admission had several attacks of acute articular rheumatism. There were marked signs of mitral stenosis with a rapidly-acting heart and cardiac hypertrophy. The first point of interest in the case was the development of some swelling over the left side of the neck, first seen on January 19th, 1899, two weeks after her admission. She complained of slight pain in the left side of the neck and down the inner part of the arm. The pain and swelling gradually increased, so that within a week there was very marked swelling over the left side of the neck, shoulder, arm and dorsal surface of the fore-arm. There was marked tenderness over the sterno-cleido-mastoid muscle and along the course of the external jugular vein. There was no special elevation of temperature

during the attack. There was no doubt that the patient was suffering with thrombosis of the external jugular vein and, also, apparently, of the subclavian and axillary veins.

Thrombosis of the peripheral veins in cardiac disease is more common in the upper than in the lower extremities. According to Bouchut, the ratio of thromboses of the veins of the upper extremity to those of the lower is placed at 1 to 50, but in cardiac disease the ratio is decidedly reversed. Dr. Welch was only able to find 26 cases in the literature of venous thrombosis of the peripheral veins in association with heart disease, and of those, 17 were in the veins of the neck or upper extremity, and it is interesting to note that the left side is much more frequently involved than the right.

To return to our case, by March 13th all the local symptoms had subsided and nothing of special importance developed until November 24th, 1899, when, at 12 o'clock, the patient suddenly complained of intense pain in the left foot, associated with a feeling of the pricking of pins or needles and some numbness. I was in the ward at the time the pain came on, and examined the foot, but nothing could be made out by the examination. The pain continued very severe during the afternoon, and at 4.30 P. M. the foot and leg still showed no changes on inspection. The next morning there was marked cyanosis of the left lower extremity as high as the tubercle of the tibia; the foot was cold, and there was great tenderness over the dorsum of the foot and about the shin. Dr. Osler saw the patient and made a diagnosis of embolism of the popliteal artery. The femoral artery pulsated, but there was no pulsation of the popliteal. The next day, November 26th, contrary to expectations, the cyanosis had largely disappeared, and the foot had become almost as warm as that of the other side. From that time on the symptoms gradually subsided, though she still has paroxysms of acute pain at times. The point of interest in connection with the case is the recovery without local gangrene. A great many of these cases result in gangrene of some portion of the extremity. In embolism of the arteries the onset of pain is usually very sudden, differing in this respect from thrombosis, where the pain is more gradual in its development.

CASE 2. Thrombosis of the left femoral vein in a case of pulmonary tuberculosis. This condition is not so very uncommon in tuberculosis, usually occurring in the veins of the lower extremities. The patient, a man 55 years of age, was admitted Oct. 22nd, with marked signs of advanced pulmonary tuberculosis. About two weeks after admission, he began to complain about midnight of severe pain in Scarpa's triangle. The next morning his leg was definitely swollen, being 3 cm. larger than the other leg at the calf. The superficial veins were distinctly dilated, and the temperature on that side was, if anything, a little higher than that of the other leg, though there was no change in its color. The pain persisted for about ten days. The swelling has gradually diminished, and at present there is a definite thickening to be made out along the course of the femoral vein. Thrombosis in tuberculosis is generally held to be due to the development of marantic thrombi. Dodwell and others think that they are of infectious origin due to various pyogenic micro-organisms. Arterial thrombosis in tuberculosis is a rare event. It occurs most commonly as a thrombosis of the pulmonary artery or its branches in tuberculosis of the lungs. Very rarely it occurs as a result of tuberculous involvement of the intima of the arterial walls.

CASE 3. Thrombosis of the right axillary and brachial veins, occurring in the course of a malarial nephritis. The patient, a man aged 39 years, was admitted Oct. 16th, 1899, suffering from malarial nephritis. He had a marked amount of albumen in the urine, with numerous casts. He was distinctly anæmic, showing less than 3,000,000 red blood corpuscles, and about 50 per cent. of hæmaglobin. Æstivo-autumnal malarial parasites were found in the blood. On Oct. 18th, it was noticed that the right arm was somewhat swollen, and this condition increased during the next three or four weeks to such an extent that it was deemed necessary to make incisions in the skin to let out the fluid. Considerable relief followed this procedure. The swelling eventually diminished, and, although suspicion was entertained of a venous thrombosis, it was not until the œdema had markedly disappeared that a marked thrombosis of the right axillary and brachial veins was found to exist.

Just what the cause of the thrombosis was in this case is hard to say. It is doubtful whether malaria had anything to do with it. French observers have claimed that malaria does, at times, cause a thrombosis of the veins, but Dr. Welch is inclined to believe that there is really no relationship between the malaria and the thrombosis in these cases. In over 2000 cases of malaria in Dr. Osler's department, no instance of thrombosis was found. It is probable that the thrombosis in this case was due either to the nephritis or to the anæmia.

NOTES ON NEW BOOKS.

Annual and Analytical Cyclopædia of Practical Medicine. By CHARLES E. DE M. SAJOUS, Philadelphia. (*Philadelphia : The F. A. Davis Company*, 1899.)

This is the fourth volume of the publication and includes subjects from "Infants, Diarrhœal Diseases of," to "Mercury." In a work of this kind a uniform excellency is not to be expected, but in this volume the editor is to be congratulated on the general high character of the articles. The task set is no easy one—to embody much in small space, and to make satisfactory extracts from large numbers of articles. The editor notes in the preface the death of one of his associates, Dr. Rohé of Baltimore, who contributed the article on "Insanity" in this volume. It is one of his last contributions.

The volume opens with an article on "The Diarrhœal Diseases of Infants," by Dr. Blackadar, of Montreal, which is full of practical points. The sections on classification and treatment are especially good. "Intubation of the Larynx" is treated of by F. E. Waxham of Chicago. This is an excellent paper and especially so in its practical character. We should like to draw attention to this feature which is often lacking. Too rarely do writers bear in mind that those who will profit by their articles have had little or no experience in the subject discussed. Details which to the experienced writer seem trivial or unnecessary are really the essential parts for the reader. Dr. A. McPhedran of Toronto, contributes two excellent articles on "Jaundice" and on "Diseases of the Liver and Gall-Bladder." He has succeeded in giving much matter in small space, and has made very comprehensive selections from the literature. The longest article is that on "Malarial Fevers" by Drs. J. C. Wilson and T. G. Ashton of Philadelphia. They have given a very full account of the disease and of the latest

investigations as to the manner of infection. The plates used to illustrate the parasites are those of Mannaberg's recent work.

It is not possible to refer to all the articles in detail; those of W. B. Pritchard of New York on "Locomotor Ataxia" and of C. M. Hay of Philadelphia on "Meningitis" are worthy of notice. Altogether this volume is an excellent one.

A Text-Book of the Practice of Medicine. By J. M. ANDERS, M. D., Philadelphia. Third edition. (*Philadelphia: W. B. Saunders*, 1899.)

The appearance of a third edition of this work shows that there was ample room for it. Many of the articles have been rewritten for this edition and some added. The author pays considerable attention to diagnosis and gives many differential diagnosis tables. We are unable to agree with him as to the value of these. We refer not particularly to these of Dr. Anders, which are good, but to the general principle. Students are too apt to attempt to memorize them, thinking it an easy path to knowledge, only to discover later that their labor has become sorrow. In discussing cardiac diseases he evidently considers the apex diastolic, or so-called Flint murmur, in aortic insufficiency as of rare occurrence, and dismisses it in a few lines. The widely divergent views as to the frequency of this murmur are interesting. The section on "Chronic Valvular Disease" is especially well-put and practical. We should hardly consider "systolic pulsation of the larynx and trachea" as a good description of Oliver's tracheal tugging. It is surprising to find no mention of eosinophilia in the discussion of trichinosis. Throughout the book the sections on treatment are full, comprehensive and practical, which is a most valuable feature.

The Medical Annual Synoptical Index. For the twelve years, 1887 to 1898. (*Bristol, England: John Wright & Co.*, 1899.)

This is an index to the contents of the Medical Annual for the years 1887 to 1898. To those who know this work it will be evident to what a large amount of material this index is the key. In addition to its being an index, it also contains many briefly-put extracts regarding new drugs and points of treatment. In the synoptical index these are put in various subdivisions under each heading. By these any special point is readily found. The notes on treatment embody much in small space. A summary of the chief changes in the new pharmacopœia is a valuable feature. There is also a supplementary index giving many cross references. The general plan of the book is excellent, and it cannot fail to be of great help to the busy practitioner. In these days of profuse medical literature, an index such as this is always of assistance.

Bacteriology in Medicine and Surgery. By WM. H. PARK, M. D., Assoc. Professor of Bacteriology and Hygiene, Univ. and Bellevue Hosp. Med. College, New York. (*Philadelphia and New York: Lea Bros. & Co.*, 1899.)

Amongst the large numbers of publications appearing every year, dealing with the subject of bacteriology for the use of medical practitioners and students, it is noticeable that the many are of doubtful helpfulness, whilst the lesser numbers only are of real service to the classes which they were intended to benefit.

It is therefore from amidst the latter sort that we single out the work by Dr. Park as worthy the attention of our readers.

It consists of an introduction dealing in an excellent manner with the history of bacteriological science, followed by forty chapters which treat of the general morphology of bacteria, their vital phenomena and their relation to disease, and the biological features of the most important pathogenic varieties; the theories of infection, immunity and recovery; the principles and practice of disinfection; the methods of procuring material for examination; the technique of staining and cultivating the bacteria; and the analysis of air and water. Inclusive is an appendix descriptive of pathogenic forms of the higher fungi, formerly classified with the bacteria.

Friendly criticism being healthful, we shall briefly deal with the failings as well as the good features of the book.

The subject matter of the chapters descriptive of the general characteristics, morphology, vital phenomena and environments of bacteria, is extensive and so lucid that the reader very readily grasps the various facts set forth. It is only to be regretted that the author did not see fit to have chapters VIII, IX, and XVII incorporated with, or made to follow chapters I, II, and III, as the sequence is undoubtedly marred by the present arrangement.

In like manner, the valuable material in chapters IV, V, VI, and VII, dealing with the relation of bacteria to disease, infection, immunity and recovery, would undoubtedly have been placed to better advantage had chapters IV and VII been combined, and chapters V and VI formed another.

The technique of mounting, staining and examining bacteria is plainly stated in chapter XII.

Chapter XIII deals with the usual methods of preparing media, the technique of inoculating and making plate cultures, and the methods of anaerobic culture. There are an unfortunate obscurity and lack of arrangement in that part dealing with the making of plate cultures, otherwise the chapter is free from faults, though somewhat terse.

A most welcome message is expressed in chapter XV. For what worker in a large laboratory has not at one time or another been greatly annoyed by the display of ignorance by those submitting specimens for examination.

One prominent feature of the book is the treatise on disinfection contained in chapters X and XI. Here we have Dr. Park's valuable and wide experiences in this one matter of Public Health, strongly and succinctly stated; and a careful perusal of these chapters amplifies one's knowledge very considerably. For in most text-books dealing with bacteriology these important points of practical disinfection are too often passed over hurriedly, or not mentioned.

Another feature worthy of comment is the ample and thorough manner in which the chapters dealing with the biological features of the various organisms, are discussed. Especially would we draw attention to those descriptive of tuberculosis, diphtheria, typhoid fever, pneumonia, gonorrhœa, cholera, glanders and rabies.

Notwithstanding some occasional obscurities in grammatical construction, and what we have considered as shortcomings, Dr. Park's work can be considered as of valuable assistance to those of the medical profession and its students, who stand in need of reliable information and help in pursuing their studies in the important subject of bacteriology.

The book is gotten up in excellent style, being printed upon good paper with clear type, and is well supplied with suitable engravings and half-tone photographs of many of the well-known bacteria.

N. MACL. H.

Diseases of the Nervous System. By LUDWIG HIRT. Translated by A. Hoch, M. D., and F. R. Smith, M. D. (*New York: D. Appleton & Co.*, 1899.)

The first English translation of this work appeared in 1893, and from the present title-page it appears that this is in no sense a second edition, but merely a reprint of the first edition; that is, that no essential changes have been made in the text either by the author or his translators, since the book was first published in America.

In the past ten years since the author published his volume first in Germany, the advances in neuro-pathology have been enormous, but though we know so much more of the finer anatomical structure of the whole nervous system, yet we are by no means able to use all this accumulated knowledge either in the diagnosis or treatment of

nervous diseases, and it is for this reason that the work under discussion only appears as a reprint and not as a second edition.

But the value of the work is thus in no wise diminished, and as a guide to the study of nervous diseases Hirt's treatise ranks as one of the very best both for the student and specialist in this line of work. The intrinsic merits of the work are clearly set forth in the introduction by Osler, who quotes Weir Mitchell's praise of the book, and the reviewer feels that when two such leaders of medicine unite in commendation of a work, this is the best review that the book can have.

Although the study of nervous diseases is one of the hardest in medicine, yet the style of the author is so clear and easy, that it is a real pleasure to read his volume; which cannot be said of most German works, even when they are so well translated as is here the case. Hirt may fairly be compared with Strümpell in the lucidity with which he writes, and his novel arrangement or description of diseases has a very distinct attraction for the reader, which the reviewer finds makes the study of nervous disorders more comprehensible than is sometimes the case.

The illustrations are excellent, there is a good index, and both type and paper are satisfactory.

Archives of Neurology. From the Pathological Laboratory of the London County Asylums, Claybury, Essex; Edited by FREDERICK WALKER MOTT, F. R. S., M. D., F. R. C. P., Director of the Laboratory, and Pathologist to the London County Asylums; Physician in Charge of Outpatients, Charing Cross Hospital. (*Westminster: P. S. King & Son*, 1899.)

The tendency toward an increase of laboratory work in connection with neurology and psychiatry in England and America is obvious. While in Germany and in Paris the association of microscopic studies of post-mortem material with careful clinical work in neurology and psychiatry has for a number of years been a prominent feature, England and America have been slower to adopt the plan. Of late, however, vigorous efforts have been made to bring psychiatry in English-speaking countries up to a higher level. The establishment of the pathological institute in New York in connection with the asylums of the state of New York, and the development of a laboratory at the Ohio Hospital for Epileptics, together with the excellent laboratories connected with several Massachusetts institutions—the McLean hospital, Worcester hospital and Danvers hospital,—are notable results of such efforts. Other asylums for the insane and institutions for the care of epileptics and the feeble-minded are rapidly making arrangements for the institution of well-equipped modern laboratories in connection with them.

The publications of the results of studies from such laboratories are beginning to appear. The Bulletin of the Ohio Hospital for Epileptics and the Archives of Neurology and Psycho-pathology from New York are well known to our readers. These, together with the results of research published in Asylum Reports are pratically the only representatives in America of a class of publications quite common in Germany. Obersteiner's *Arbeiten*, Wernicke's *Arbeiten*, Pick's *Beiträge*, Henschen's *Studien*, Möbius' *Beiträge*, Kraepelin's *Arbeiten* and other examples will be immediately called to mind.

One of the most important of the more recent laboratory establishments is that in connection with the London County Asylums. The London County Council has authorized the building of a laboratory in connection with the asylum at Claybury in Essex, and has equipped it well for scientific work by modern methods. Autopsies are made at all the asylums, but the laboratory at the Claybury institution is the headquarters for the working up of the tissues. The Council has been fortunate enough to secure as director of the laboratory and pathologist to the asylums, Dr. Frederick Walker Mott, well known in this country as well as in Europe for his important researches in the experimental physiology and pathology of the nervous system. At the end of 1899, Dr. Mott has published a large volume entitled "The Archives of Neurology," which includes the more important researches made in the laboratory by himself and others during the past year. The Archives are to be published annually, and will thus contain the collected papers dealing with the pathological work of the London County asylums.

The first volume includes some twenty-four papers, ten of which bear the editor's name. The papers are all interesting, and a number of them are of unusual importance. Dr. Mott's studies on "Brain Syphilis," on the "Ætiology and Pathology of General Paralysis," on "Juvenile General Paralysis," and on "The Chemistry of Nerve Degeneration," must be studied with care by all who are more than superficially interested in the problems to which these titles refer. Dr. Hamilton Wright contributes valuable papers upon "The Tangential System of Fibres of the Inferior Frontal Convolution in General Paralysis," on "Alcoholic Atrophy" and, in connection with Dr. Mott, upon the "Changes in the Spinal Ganglia and Peripheral Cutaneous Nerves in a Case of General Paralysis with Bullous Eruption." One of the most interesting casuistic reports is that by Dr. Mott dealing with the spinal cord, peripheral nerves and muscles in a case of acute poliomyelitis in which the fatal termination occurred sixteen days from the onset. The sensory ganglia in tabes have been studied by Mr. Salaman. Dr. Barratt describes the results of his observations on the normal anatomy of several cerebral nerves, and also on the amount of water and phosphorus contained in the cerebral hemispheres and spinal cord in several pathological conditions.

The volume is printed upon heavy paper, of good quality, and the articles are liberally illustrated, many of the illustrations consisting of excellent colored plates. The publication can be heartily recommended to all students of neurology and psychiatry, and represents by all odds the most important recent addition to the bibliography of these subjects.

Those interested in the introduction of pathological work into asylums will do well to read the preface to the volume, written by Dr. W. J. Collins, who was formerly chairman of the London County Council. Dr. Collins, after speaking of the importance of the study of the pathological lesions in cases of insanity, describes the origin of the Claybury institution and refers briefly to the plan of the pathological laboratory established there. A significant feature is the endowment by the Technical Education Board of several research scholarships. The fact that such well-known names are connected with these scholarships proves the desirability of such endowments. Where a group of trained investigators can be gathered together under one roof, the output of a laboratory ought to be much greater than where the same individuals work independently in different places. The danger of accumulating, by the scholarship method, a group of *dilettanti* is not a serious one, provided the choice of men for the positions is relegated to the active pathologist in charge.

LEWELLYS F. BARKER.

A Laboratory Manual of Physiological Chemistry. By E. W. ROCKWOOD, B. S., M. D. (*Philadelphia: F. A. Davis Co.*, 1899.)

Instructors in physiological chemistry have long felt the need of an English manual which will contain clear and accurate descriptions of well-selected experiments, noting the precautions that must be observed in order that the experiments may be brought to a successful conclusion, and giving at the same time a sufficient amount of descriptive material to make the object of each experiment intelligible.

This little book, which might more properly be termed an elementary manual, certainly fulfills these conditions. The material is printed in two kinds of type, so that it is optional with the instructor whether the course be made one of moderate duration or a somewhat shorter one. The student is introduced to chemical

processes which are more or less confined to physiological chemical work, by an introductory series of experiments on the three great classes of organic foods; then follow brief chapters on the various tissues and fluids of the animal body. Cuts of microscopic preparations, tables for the preparation of re-agents, and a rather poor spectroscopic chart are also given.

The manual however is not above serious criticism. The whole modern science of physical chemistry is simply ignored, and the author believes that urinary indican is formed somewhere in the body by the union of potassium and sulphuric acid with indoxyl. In spite of these and numerous other short-comings which could be cited, we believe the book to be, on the whole, worthy of recommendation as an experimental guide.

The Cranial and First Spinal Nerves of Menidia. A Contribution upon the Nerve Components of the Bony Fishes. By C. Judson Herrick, Associate in Comparative Neurology, Pathological Institute of the New York State Hospitals. pp. 1-299, with seven plates and several illustrations in the text. (*Utica: State Hospitals' Press*, 1899.)

If one looks over the contributions to neurology, which have been made by American investigators in recent years, he is struck by the fact that a large proportion of these refer to the comparative anatomy of the nervous system. This is doubtless due, in the first place, to the high standards which have been set in biological work in this country; and secondly, to the fact that, of the large number of investigators trained in biological laboratories, several of the best men have been attracted toward neurological problems. While it may be true, that many of the studies in comparative neurology have appeared to have but little bearing upon more-distinctly medical problems, medical neurologists have, of late, come to appreciate the marked advantages derivable from a view of the human nervous system from the standpoint of comparative anatomy. The studies upon the phylogeny of the cerebral cortex, and upon the primary and secondary visual and auditory centres need only be mentioned in order to recall to mind the new light upon the structure and functions of the human nervous system, which is attributable to such studies.

The investigations of O. S. Strong, upon the cerebral nerves of the amphibia, inaugurated a new series of researches, the results of which promise to be of very high importance also for human neurology. The application of the doctrine of nerve components to the cerebral nerves followed naturally upon the "four-root theory" earlier formulated for the spinal nerves. Strong's researches on the tadpole established, for the first time in the same type, both the central and the peripheral relations of the sensory components of the cerebral nerves. Since his studies, a number of students have undertaken similar problems connected with other types. The extreme diversity in structure met with among the various groups of fishes makes them particularly suitable for the continuation of such researches, and a number of investigators are at present directing their attention in large part toward the study of the morphological variations met with in these animals.

The work before us represents a most elaborate contribution to our knowledge of this particular subject, dealing as it does with the nerve components in Menidia, the ordinary species called "silver-sides," so abundant in shallow water near Woods Holl, Massachusetts. Dr. Herrick, after an introductory section, discusses the lateral-line canals and their organs, the central relations of the cranial components, the spinal nerves, the nerves of the vagus group, the auditory nerve, the trigemino-facial complex, the sympathetic nervous system, the eye-muscle nerves, the optic nerve and the olfactory nerve and nasal organ. Space will not permit us to enter into a description of his findings or discussion of his results. It will suffice to call the attention of neurologists to this very valuable research. It must be read by every worker who wishes to be familiar with the newer studies in the domain with which it deals. Dr. Herrick's section XII, devoted to certain general considerations, makes especially interesting reading. In his section XIII, he has epitomized his results, and if one has not the time to master the whole article, he can find in this chapter, succinctly recapitulated, the principal points of the paper. To the reviewer it seems a matter of very high interest, that the comparative anatomists have been able to isolate so perfectly the various components of the cerebral nerves. The solutions of many of the problems, as worked out in these lower forms, can scarcely fail to be of great help in the clearing up of certain very complex problems which now puzzle the human anatomist, especially in connection with the rhombencephalon.

L. F. B.

Recollections of a Rebel Surgeon (and other sketches), or, In the Doctor's Happy Days. By F. E. Daniel, M. D. Illustrated. (*Austin*, 1899.)

This little book comes to us from the *Texas Medical Journal*, and contains a number of sketches which have appeared in that Journal during the past year. They are often humorous; sometimes pathetic; and at all times interesting. They are especially of value, as giving a picture of the state of things in the Southern Confederacy during the Civil War, and as such must always be read with interest. The humor is sometimes a little coarse; sometimes far-fetched, but the general effect of the book is pleasant, and one who has started to read it is likely to continue to the end.

Proceedings of the New York Pathological Society, 1897-1898.

Besides containing the pathological descriptions of a very large number of anatomical specimens brought before the society, this volume is also enriched by a long and valuable paper by W. T. Sedgwick, "On the Establishment and Conservation of Purity in Public Water Supplies." A great variety of subjects were presented for consideration to the society, and there are many interesting discussions on abnormal hearts, livers, lungs, kidneys, etc. There is an index to the volume, so that it is easy to look up any subject in which one may be interested; but the index should be better arranged—it is needlessly complex, with double references.

The Modern Treatment of Wounds. By John C. Summers, Jr., M. D. (*Omaha: Medical Publishing Company*, 1899.)

It is a pleasure to come across a small work of this kind, which can be highly praised and recommended. The treatment of surgeons varies like that of doctors, but this is a work which can safely be put into the hands of any young surgeon, and it will do many an older surgeon good to read this book. It is supplied with a good index, and with a few illustrations, some of which might have been better chosen, but it is the text which is essential, and this deserves commendation. There is one point on which we believe the author is somewhat too progressive in his surgery, and that is in the treatment of perforating wounds of the orbit, and skull as a whole. Somewhat more conservatism in the treatment of such wounds seems to us advisable. We note also that he says nothing of the value of prolonged baths in the treatment of severe wounds of large surfaces of the body, and it appears to us also that the strength of the solutions of bichloride of mercury, which he uses for burns, is too high. That the book, however, will be found most useful by many practitioners, we have no doubt.

Love and its Affinities. By George F. Butler, M. D. (*Chicago: G. P. Engelhard & Co.*, 1899.)

Under this somewhat illusive title, the author attempts to make clear in a short treatise the psychology and binding links of lust, love, and religion. The thesis shows a wide reading of both ancient

and modern authors, especially the poets; but while it will do no one any harm to read this little work, it is doubtful whether after having read it, he will find himself any the wiser. That this triune is intimately bound together, none will attempt to deny, but like so many other problems in psychology and philosophy, the explanation of this unity seems to lie outside the power of words to express. We understand their association, but no one can explain love, any more than he can explain any other pure mental or physical quality; for the mind and body, are so intimately connected, that it is almost impossible to separate one from the other. However, the author has treated his subject delicately, and deserves praise for this, for it is difficult to treat lust and love in the same category, for the ideal passion is much more intangible and inexpressible than the physical.

Hints on Elementary Physiology. By FLORENCE HAIG-BROWN. (*Philadelphia: P. Blakiston, Son & Co.*, 1897.)

This is an excellent little primer for nurses; and the introduction, by Dr. William M. Ord, is a recognition of its merit. He says: "As an evidence of earnest diligence in preparation for what is one of the most responsible and certainly the very hardest possible occupation in life (nursing), it calls for all praise and respect. The qualities of the book will, I am well assured, command the success which I most heartily wish for it." It is abundantly illustrated, and the plates are for the most part good, but some should be changed in a second edition, especially that one illustrating the mucous surface of the ileum, on page 79. We do not desire to be hypercritical, but on page 101 the author states that the tongue "is composed of muscle, fat, the hyoid bone, and the lingual vessels and nerves." In such an elementary treatise as this, is it not a little misleading to consider the hyoid bone as a portion of the tongue? Under the title of ventilation, we find the temperatures, given as suitable for dwelling rooms, surgical and medical wards, etc., very low—much lower than is the custom here in America to keep such rooms, and we believe too low for health in many cases. This little book is, in spite of any small deficiencies, far superior to many larger works on this subject written for nurses, and it is to be hoped it may have a wide circulation.

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